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ABSTRACT

Twelve Spanish-speaking kindergarteners living in Los Angeles were tested for usage of English verb tense morphemes through responses elicited during task situations that were dramatized with the use of toy-like realia. The children were first asked to provide a constructed response to questions, and were then given model sentences for immediate imitation. For comparison, three English-speaking kindergarteners were similarly tested. A longitudinal follow-up was done at the first-grade and third-grade levels. The data were sufficient to support an acquisition sequence for five auxiliary morphemes. In kindergarten, only the progressive suffix "-ing" was produced to criterion by a high percentage of the Spanish speakers. In first grade, "did" came under control. In third grade, where morphemic tense usage within relative clauses was recorded, perfective "have" and the suffixes "-ed" and "-en" reached criterion in certain contexts ("have" was controlled in negative contexts only, the suffixes in affirmative contexts only), but command of these morphemes was still developing. This finding suggests that phonetic difficulty may initially constrain past-tense marking to a context-sensitive rule, limited to vocalic or sonorant stem-final environments. A bibliography is appended. (JB)

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A Bilingual Study of Selected Syntactic Skills in Spanish-Speaking Children

TR 60 October 31, 1977

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SWRL EDUCATIONAL RESEARCH AND DEVELOPMENT

TECHNICAL REPORT 60

October 31, 1977

A BILINGUAL STUDY OF SELECTED SYNTACTIC SKILLS IN SPANISH-SPEAKING CHILDREN

William Russell and David Snow

ABSTRACT

Forty-six primary grade Spanish-speaking children participated in a series of interviews conducted in Spanish and English. The children responded to structured language production tasks designed to elicit various sentence modalities, relative clause constructions, and a number of features of the verbal auxiliary. The inquiry focused on the children's developing English proficiency, which was observed and assessed in relation to their performance in Spanish for the same communication tasks. The present report includes the findings of a cross-sectional study in which twelve kindergarteners participated, and summarizes a three-year longitudinal follow-up of five of these children.

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A BILINGUAL STUDY OF SELECTED SYNTACTIC SKILLS IN SPANISH-SPEAKING CHILDREN

William Russell and David Snow

In our bilingual-bicultural inquiry over the past several years we have been investigating the oral language proficiency of young Spanish speakers in various stages of learning English. We have been especially concerned with questions of instructional relevance such as: What are the relative expressive communication skills of these children in Spanish and English? Do Spanish skills diminish perceptibly in the early stage of English acquisition? Do second language acquisition and loss of first-language skills proceed according to some predictable pattern? How stable are acquisition rates across the local Spanish-speaking pupil population?

We are currently developing a knowledge base from which to address such questions by observing K-6 Spanish speakers in basic communication situations requiring particular syntactic strategies. In the initial stage of this building effort, we concentrated on fundamental strategies that we expected native Spanish-speaking primary grade children to control in their native language; we observed the development of these strategies in English while concurrently monitoring their Spanish analogues. The present report deals primarily with the emergence of the English auxiliary in the speech production of these children. Like many other investigators, we have chosen the auxiliary for detailed study, in part because of its fundamental usefulness: the auxiliary is required for most utterances. Beyond this, the auxiliary is rich in the grammatical morphemes that modulate the meaning of sentences; the acquisition of this system represents a major step in the development of a sophisticated grammar that goes beyond the basic phrase structures to which the learner is initially limited. This area of the grammar was the target of study when we interviewed twenty-one pupils who were learning English in kindergarten. We interviewed five of these pupils again when they were enrolled in a special ESL first-grade class and a third time when they were in regular third-grade classes.

This paper reports findings of the kindergarten study, using the results for the children who were able to complete the English portion of the interview. In addition, it presents some first- and third-grade data from the five children whom we refer to as the "longitudinal group." This additional data is used together with the more extensive kindergarten data to infer a longitudinal sequence in the acquisition of selected features of the English auxiliary system by these second-language learners. Other researchers have been concerned with the observed order of acquisition among a set of morphemes. Brown (1973b) summarized

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An abbreviated version of this paper was presented at the SWALLOW VI Conference, April 16, 1977.

the classic longitudinal study of Adam, Eve and Sarah. De Villiers and de Villiers (1973) followed this with a cross-sectional study. Dulay and Burt (1974a) compared the results of these studies with the production of morphemes by young learners of English as a second language. In the present paper we continue this line of inquiry by focusing on a set of morphemes which are functionally interrelated within the auxiliary system. Our analysis includes an investigation of the important effect of grammatical context, such as interrogative versus declarative sentence type, on the acquisition of auxiliary verbs. Other topics discussed, beyond the auxiliary, include the analogy between first- and second-language learning, the development of relative clause formation in Spanish and English, and some methodological questions arising from our use of structured elicitation procedures.

KINDERGARTEN STUDY

Language inquiry inevitably involves determining the relationship between form and meaning. In the case of children's language, especially at early stages of first- and second-language learning, the exact communicative intent may be very difficult to determine. Both first and second language learners frequently omit grammatical markers such as the various elements of the English auxiliary, leaving their intent unclear in absence of clear contextual clues. Furthermore, second-language learners sometimes employ grammatical morphemes to convey meanings other than those native speakers would convey by means of the same choice of morphemes (Wagner-Gough & Hatch, 1975).

In attempting to associate grammatical markers (or absence of markers) with particular intentions, a number of child language researchers have used the notion of "obligatory context" to determine the target adult form which corresponds to the child's intention (Brown, 1973b; Dulay & Burt, 1974a). "Obligatory context" is defined by a combination of formal (linguistic) and informal (situational) cues. For instance, in the utterance *She playing* the presence of the progressive marker together with some situational or discourse indication that present action is being described, defines an obligatory context for the missing auxiliary, *is*. Utterances such as *She play* are more problematical, since judgements about the context alone must be used in determining the intended tense and aspect. Non-adult utterances that are not supported by sufficient situational or discourse cues present problems to the "obligatory context" approach.

The method of scoring responses used in the present study was different from the obligatory context approach just described. We structured the data collection itself to provide situational contexts for the occurrence of given patterns, and we used these situations to determine the intention of each response. The elicitation situations are illustrated in the Method section below. This procedure avoided any circular appeal to form in establishing form-meaning relationships. It was especially helpful in scoring unmarked responses such as *Ellie not open the door*. We simply counted all responses as intending to convey the auxiliary meaning called for by the task situation, regardless of the form of the response. The fact that tasks were practiced first in the child's native Spanish added confidence to our scoring procedure.

Another reason for using structured elicitation was that it allowed all speakers to participate equally in the production of each auxiliary pattern studied. In this way we were able to compare the use of particular formal elements, progressive *-ing* and regular past *-ed*, in the same group of children. Less structured data collection frequently elicits different items from different subsets of the speaker population studied.

Speaker Population

All twenty-one kindergarteners had difficulty in English; only twelve were able to complete the English portion of the bilingual interview. The parents, except those of one pupil, were born in Spanish-speaking countries, mostly Mexico. At the time of this study, they were residing in a lower socio-economic neighborhood in the southern part of the Los Angeles metropolitan area. Three native English-speaking kindergarteners who attended regular classes at the same school were also interviewed. The twelve Spanish speakers who completed the English portion of the interview are listed below in descending order with respect to the average occurrence in their speech of adult-like auxiliary patterns across all task types. Members of the longitudinal group, for whom we also have first and third grade data, are underlined. Pseudonyms are used.

NAME	AGE	BIRTHPLACE
Luis	5, 11	U. S. A.
Felipe	7, 1	Mexico
Juan	6, 2	U. S. A.
Dolores	6, 5	U. S. A.
Mario	5, 7	Mexico
María	6, 5	U. S. A
Pedro	7, 4	U. S. A.
José	5, 11	Mexico
Anita	6, 2	Mexico
Carlos	6, 0	Mexico
Miguel	5, 11	Mexico
Teresa	5, 10	Mexico

Method

Responses were elicited in structured elicitation tasks designed to permit only one pattern of tense, aspect, and polarity. The task situations were dramatized with the aid of two cardboard cutout animals, a hand puppet named Ellie (already familiar to the children from their ESL class activities) and other toy-like manipulanda. Two bilingual interviewers were present. One manipulated the characters, offering a few appropriate comments, while the other administered the elicitation protocol. Intended (target) responses were all non-elliptical active, declarative sentences, in the third person singular. In the initial phase of the interview, a tenseless (imperative) model was provided containing the basic elements of the target response (in a manner described below) but not containing any auxiliary morphemes. The tasks of this initial phase, in which speakers were required to supply the appropriate verbal auxiliary and inflections, we will refer to as constructed response (CR) tasks. They were followed by an imitation phase consisting of sequences of sentences fully modeled by the interviewer for immediate imitation (IM).

CR tasks were organized into three sections, each devoted to a particular tense/aspect pattern. These were:

I.	PRESENT PROGRESSIVE	affirmative only
II.	PRESENT PROGRESSIVE	affirmative and negative
III.	PAST TENSE	affirmative and negative

The interviewer initiated each task by giving separate commands to two of the characters, e.g., *Ellie, read the book. Cat, push the box.* In some instances both of the characters would respond with appropriate actions. In others, eliciting negatives, one of the characters would not perform the desired activity. The task objective was to describe what the characters did, or what they didn't do. The objective of the task for each of the three sections outlined above was first taught and practiced in Spanish. The target response was initially modeled by the interviewer, e.g., *Ellie está leyendo el libro.* or *Cat no está brincando, ¿verdad?* and elicited in subsequent trials by asking: *¿Qué están haciendo?* (What are they doing?); and finally by asking simply: . . . *¿y tú me dices?* (. . . and you say?). Past tense responses were elicited by asking: *¿Qué pasó?* (What happened?). When such a pattern had been established for one of the three CR sections of the interview and the interviewers were confident that the task objective had been understood in Spanish, the tasks for that section were given in English. In this way it was not necessary for the interviewers to model any of the elicited English morphemes, except for the *-ed* suffix, which was modeled in the question *What happened?* Figure 1 summarizes the procedure.

At the conclusion of each of the three parts of the interview, the present tense agreement morpheme, *-s*, was also elicited, in the following way: The interviewer said: *Now they're going home. Tell me where they live.* Responses to this were learned and practiced in Spanish during the first of the three Spanish practice sections. Appropriate actions were dramatized as usual, e.g., the bird going to a cardboard house.

The children quickly grasped the intention of the CR tasks and responded to them with affect. All pupils, in both the Spanish and the English sections, participated eagerly.

After all CR tasks were completed, dramatizations were repeated and responses were modeled for imitation. These IM tasks included the five auxiliary patterns elicited by CR tasks plus four more patterns which were elicited by imitation only.

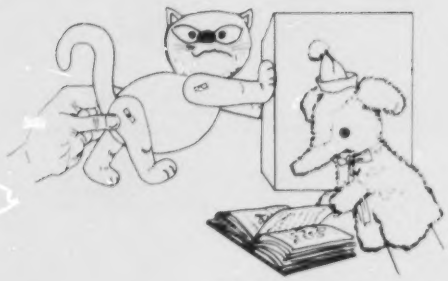
Figure 1. Kindergarter study elicitation procedure.

Part I. Affirmative present progressive

Interviewer: ELLIE, READ THE BOOK.
CAT, PUSH THE BOX.

...and you say...

Response: *Ellie's reading the book and cat's pushing the box.*

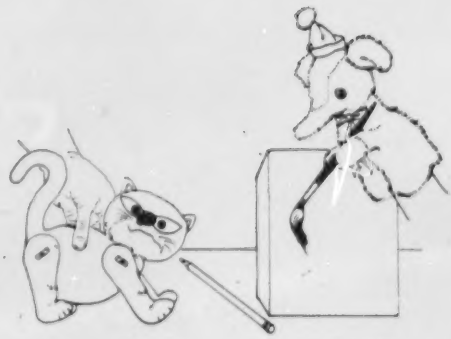


Part II. Affirmative and negative present progressive

Interviewer: CAT, PUSH THE PENCIL.
ELLIE, PAINT THE BOX.

...and you say...

Response: *Ellie's painting the box but the cat's not pushing the pencil.*



Part III. Affirmative and negative simple past

Interviewer: BIRD, JUMP.
ELLIE, PAINT THE BOX.

The first interviewer closes her eyes and the second interviewer manipulates the characters as illustrated. When the dramatization has been completed, the first interviewer uncovers her eyes and asks,

WHAT HAPPENED?

Response: *The bird jumped but Ellie didn't paint the box.*

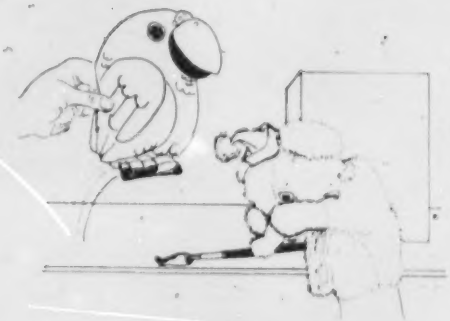


Table 1 summarizes interview items, with examples of the nine sentence types elicited, and the number of trials per pupil for each sentence type in constructed-response and imitated-response phases.

Table 1

Auxiliary Patterns Elicited in Kindergarten Interviews

	Auxiliary Type Elicited	Example	Number of Items CR	IM
	Present Progressive			
1	affirmative declarative	Ellie's reading the book.	27	7
2	affirmative interrogative	Is Ellie painting the box?	--	10
3	negative declarative	The bird's not painting the box.	11	6
	Past Tense			
4	affirmative declarative		23	7
	4a suffixed (-ed)			
	(1) consonantal -[t]	The cat jumped.	12	4
	(2) syllabic -[ɪd]	Ellie painted the box.	5	1
	4b irregular	Ellie read the book.	6	2
5	affirmative interrogative	What did the bird push?	--	10
6	negative declarative	Ellie didn't open the door.	15	6
	Present Tense			
7	affirmative declarative	The bird lives in the house.	9	3
8	affirmative interrogative	Where does Ellie live?	--	6
9	negative declarative	The bird doesn't live in the box.	--	3

The affirmative past tense auxiliary type is subdivided in Table 1 according to the various allomorphs of the past tense morpheme. Preliminary analysis revealed that the only differences in response distribution were between regular and irregular past morphemes (except in the case of one child to whom we will refer in a discussion of the results below). For this reason all allomorphs of the regular past suffix are grouped together under the general notation of *-ed* morphology in most of the following discussion.

Results

Table 2 shows the English responses that were elicited both from learners and native speakers. The percentages given indicate the distribution of response types for each task or subtask. These percentages reflect group means calculated from percentages individually tabulated for each child.

In the results for the second-language learner group, we see that responses are generally characterized by the omission of auxiliary verbs and the lack of tense and agreement inflections. Negation is always marked, usually by placing *no* or *not* before the verb. These characteristics of the children's speech, together with the frequent use of the progressive suffix, *-ing*, and control of the articles, *a* and *the*, parallel very closely the description of early native English acquisition at Klima and Bellugi's (1966) period II. This similarity has also been pointed out by Dulay and Burt (1973). Dulay and Burt presented or reviewed numerous other examples of parallel first- and second-language development (1972, 1973, 1974a, 1974b), in support of their hypothesis that young first- and second-language learners acquire language in similar ways. They characterized this learning, following Brown (1973a), as a "creative construction process" rather than a process of transfer based on native language models, a conclusion that our findings also support.

Before looking further at the Spanish results, we will briefly comment on the responses of the three native English speakers (see the column headed NS on Table 2). These were predominantly adult-like except for irregular past, which was either unmarked (*sit*) or regularized (*sitted*). Berko (1958) and Menyuk (1963) reported similar difficulties with irregular past tense forms on the part of both preschoolers and first graders. Another notable result of the native speaker interviews was that they sometimes constructed past progressive responses to our simple past tasks (23%). They also occasionally omitted the *-ed* suffix from regular past verbs (20%).

Now we will look at the second-language learner results in more detail by investigating the order of difficulty of the auxiliary morphemes elicited. The discussion will be restricted for the moment to morphemes and auxiliary patterns which were included in both CR and IM tasks. Figure 2 summarizes the results of constructed and imitated response tasks. The target morphemes of these tasks are listed, singly and in combination, in order by their frequency of correct use in the children's responses. Affirmative and negative contexts are shown separately for the progressive morphemes since we find notable differences in the results according to this variable. Figure 2 displays constructed response frequencies, shown as solid bars, and data from imitation tasks as well. Since imitation frequencies are all greater than free response frequencies, they are displayed as increments to the latter (i.e., the broken IM bars have the same point of origin on Figure 2 as the solid bars). Also shown are the numbers of children who used each particular morpheme or combination in 67% or more of the tasks requiring that morpheme. This criterion level was selected in order to include the children who gave two correct responses in imitating the *-s* suffix, because this one item was restricted to only three trials.

Table 2

Kindergarten Responses: Second-Language Learners (LEARNERS, N=12) and Native Speakers (NS, N=3); Constructed (CR) and Imitated (IM) Language Elicitation Tasks

AUXILIARY	RESPONSE EXAMPLES	MEAN PERCENT LEARNERS CR	LEARNERS IM	NS CR
PRESENT PROGRESSIVE				
1 affirmative declarative	Ellie *is* read*ing*.	37	54	86
	The bird jump*ing*	20	29	8
	Ellie he'*s* read the book.	3	1	
is + -ing	The cat push the pencil.	38	11	5
2 affirmative interrogative	What *is* Ellie paint*ing*?		60	
	What's the bird's push*ing*?		3	
	The bird's push*ing* the box?		4	
is NP + -ing	What Ellie paint*ing*?		16	
	The cat jump?		7	
3 negative declarative	Ellie *isn't* read*ing* the book.	17	36	89
	He *wasn't* paint*ing*.			3
	The cat *not is* push*ing* the	1	3	
is not + -ing	the pencil.			
	He *not* push*ing* the pencil.	11	20	8
	The cat *no* jump*ing*.	4	13	
	Ellie *don't* read the book.	2	1	
	Ellie he *is* jump*ing*.		5	
	The cat *not* move the house.	5	1	
	Ellie *no want to* sit down.	13		
	The bird *no* paint the box.	43	5	
PAST TENSE				
4a affirmative declarative	The cat jump*ed*.	7	9	57
	The bear *was* mov*ing* the door.			23
	The cat jump*s*.	2	5	
-ed	The cat is mov*ing* the house.	3	1	
	Ellie *is* paint the house.	6	3	
	Ellie paint the box.	79	75	20
4b irregular	The cat *sat* down.		38	8
	The bear [rIydɨd] the book.	3		40
sat	Ellie's read*ing*.	6		
read [red]	Ellie [rIyd] the book.	84	50	47

AUXILIARY	RESPONSE EXAMPLES	MEAN PERCENT LEARNERS CR	LEARNERS IM	NS CR
PAST TENSE				
5 affirmative interrogative	*Did* Ellie read?		43	
	Is the cat jump?		9	
	[də] Ellie paint the box?		6	
did NP	The bird push the book?		19	
6 negative declarative	Ellie *didn't* open the door.	21	26	87
	The bear *wasn't* read*ing* the book.			8
did not	Ellie he *don't* read the book	10	3	
	The cat *not* jump.	16	32	
	Ellie *no* read the book.	46	21	
PRESENT TENSE				
7 affirmative declarative -*s*	The bird live*s* in the house.	11	23	100
	The cat liv*ing* in the box.	2	3	
	Ellie live in the book	85	67	
8 affirmative interrogative *does NP*	Where *does* Ellie live?		23	
	Did the cat live in the box?		10	
	[də] Ellie live in a book?		15	
	Is the bird live in the house?		27	
	Where a cat live?		13	
9 negative declarative *does not*	The bird *does not* live in in a box.		14	
	The cat is not liv*ing* in the box.		8	
	Ellie she *not* live in the box.		22	
	The cat he *no* live in the house.		20	

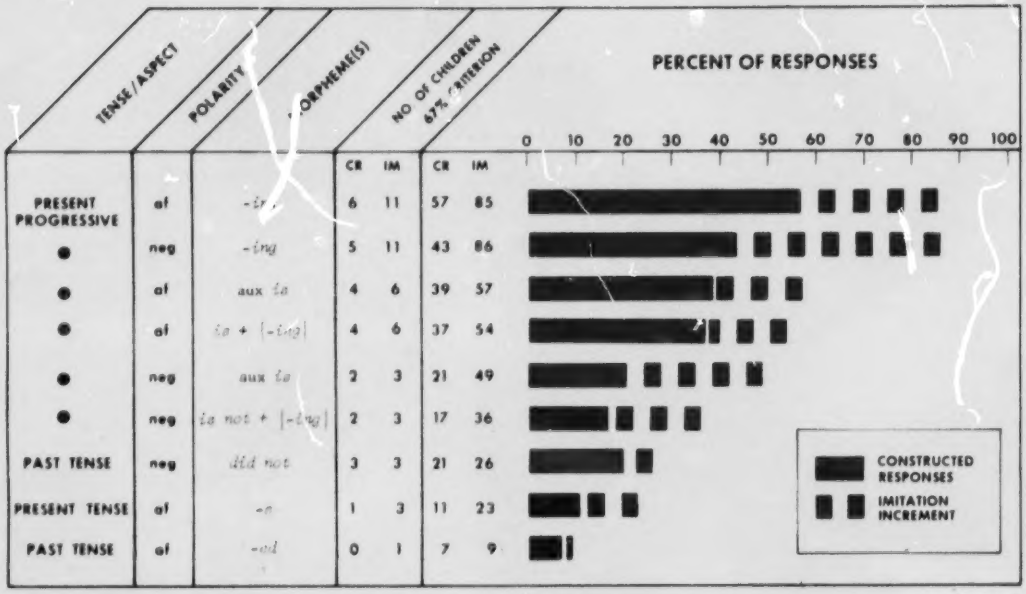

TENSE/ASPECT
POLARITY
MORPHEME(S)
NO OF CHILDREN 67% CRITERION
CR IM
CR IM
PERCENT OF RESPONSES
0 10 20 30 40 50 60 70 80 90 100
PRESENT PROGRESSIVE af -ing 6 11 57 85
neg -ing 5 11 43 86
af aux is 4 6 39 57
af is + [-ing] 4 6 37 54
neg aux is 2 3 21 49
neg is not + [-ing] 2 3 17 36
PAST TENSE neg did not 3 3 21 26
PRESENT TENSE af -s 1 3 11 23
PAST TENSE af -ed 0 1 7 9
CONSTRUCTED RESPONSES
IMITATION INCREMENT

Figure 2. Comparison of mean target-response percentages for constructed (CR) and imitated (IM) language elicitation tasks. Twelve Spanish-speaking kindergarten children.

We see that the *-ing* suffix is controlled by a substantial number of the children, especially when modeled by the interviewer. In contrast, the past tense auxiliary *did* in negative contexts is produced to criterion by only the three most proficient children, Luis, Felipe and Juan, who account for all of the constructed response production and most of the imitation of this morpheme. But the most striking feature of the speech of the twelve children is the near absence of the inflections *-s* and *-ed*. In virtually all cases the form produced, or imitated, was the unmarked verb.

Only one child, Luis, used these inflections in other than isolated instances. Luis was the most proficient English speaker of the group both according to the total number of correct responses in our study and according to school personnel judgments. He had no difficulty with any of the morphemes studied, except for the syllabic allomorph of past tense *-ed* and the irregular past tense verb forms, although he was able to imitate these items. In CR tasks, he produced the consonantal allomorph (*The cat jumped*) but the syllabic case was always unmarked (*Ellie paint the box*). There were some instances

of the syllabic allomorph incorrectly suffixed to irregular verbs, giving *sitted* and *readed* in variation with the unchanged verb, a pattern consistent with native acquisition findings (Berko, 1958; Ervin, 1964).

Comparing constructed and imitated responses, we find that the relative ordering of response frequencies for the morphemes shown in Figure 2 is virtually identical across the CR and IM task types. Correlations between the two task types were significant for all morphemes except *-ing*. CR/IM correlations are shown in Table 3.

Table 3

Correlations Between Constructed and Imitated Responses of Twelve Spanish-speaking Kindergarteners

Morpheme(s)	r
-ing (af)	.54
-ing (neg)	.33
is (af)	.84**
is (neg)	.82*
is + *-ing*	.81*
isn't + *-ing*	.87**
did not	.95**
-s	.74**
-ed	.78*
Total	.89**

* $p<.01$.
** $p<.001$.

For the more difficult items including auxiliary *is*, constructed and imitated response frequencies for the twelve children correspond very closely. The *-ing* morpheme is clearly exceptional. The low CR/IM correlations for *-ing* were due to the fact that some of the children produced correct IM reponses with dramatically higher frequency than correct CR responses. This is partly reflected in Figure 2 (page 10) by the large increase in the number of children reaching 67% criterion for imitation of *-ing*. In general, the close relationship between production and imitation is consistent with the experience of many early acquisition researchers (Slobin & Welsh, 1973; Ervin, 1964) who found that immediate recall from a model does not produce substantially different grammatical structures from those that are already available to the child as evidenced by freely generated utterances. But the general availability for imitation of *-ing* in our data is not anticipated by CR responses and this may indicate that evidence from constructed responses alone does not always fully mirror learning progress.

We turn now to an investigation of auxiliary patterns in a wider variety of contexts, including affirmative and negative declaratives and affirmative questions. We have relied on imitation results to do this since many of the relevant items, questions especially, are difficult to otherwise elicit in a natural way, and since CR and IM response correlations are generally quite high. Using the imitation data, we show in Figure 3 the mean percentages of correctly imitated auxiliary patterns for all nine item types included in the study. These are displayed in order by the mean frequency of correct responses.

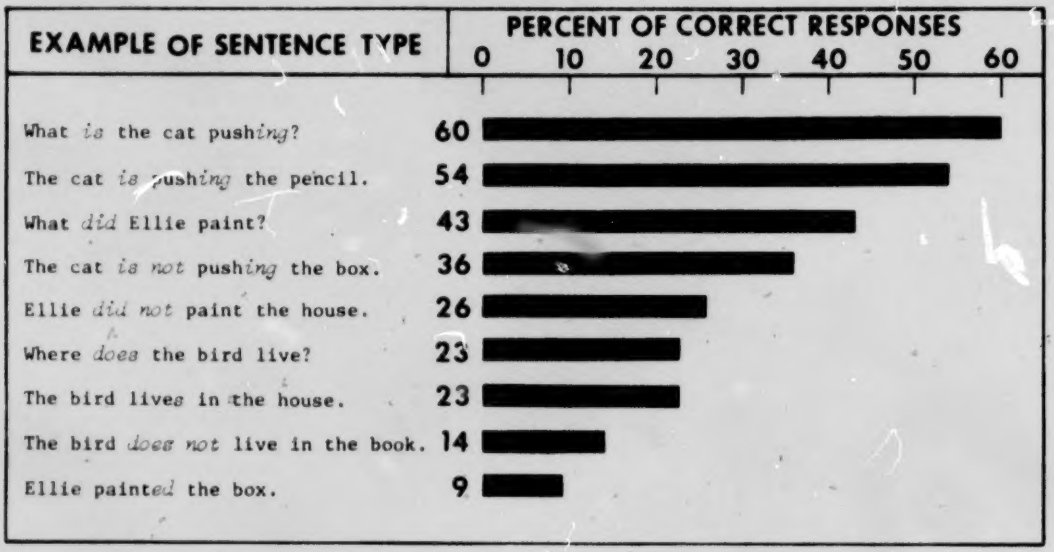

EXAMPLE OF SENTENCE TYPE
PERCENT OF CORRECT RESPONSES
0
10
20
30
40
50
60
What *is* the cat push*ing*? 60
The cat *is* push*ing* the pencil. 54
What *did* Ellie paint? 43
The cat *is not* push*ing* the box. 36
Ellie *did not* paint the house. 26
Where *does* the bird live? 23
The bird live*s* in the house. 23
The bird *does not* live in the book. 14
Ellie paint*ed* the box. 9

Figure 3. Summary of kindergarten imitation results.

These results, together with those shown in Figure 2, give the following sequence of morpheme difficulty *-ing, is, did, (does, -s), -ed.* We show *does* and *-s* together since our data does not reveal a clear difference in sequence between them. Beyond this, Figure 3 shows that auxiliaries, *is, did, does,* in negative sentences are not imitated as well as the same auxiliaries in interrogative sentences. This is primarily due to the fact that auxiliary verbs are omitted much more frequently in negative contexts.

For example, the mean percentages of deletion for the past tense auxiliary *did* are shown below with examples representing the two contexts:

INTERVIEWER	RESPONSE	%
DID THE CAT JUMP?	*The cat jump?*	19%
THE CAT DIDN'T JUMP.	*The cat no jump.*	53%

The children imitated *did, does,* and *is* (or provided a substitute) significantly better in questions than in negative sentences ($p < .01$). This context effect is further illustrated below by excerpts from the imitation section of the interview with Pedro.

	INTERVIEWER	PEDRO
a)	IS THE BIRD PUSHING THE HOUSE?	*Is a bird pushing the house?*
	YES, THE BIRD IS PUSHING THE HOUSE.	*Yes, the bird pushing the house.*
	THE BIRD IS NOT PUSHING THE BOOK.	*The bird not pushing the book.*
b)	DID THE BIRD JUMP?	*Did the bird jump?*
	THE BIRD DID NOT SIT DOWN.	*The bird not sit down.*
c)	DOES THE BIRD LIVE IN THE HOUSE?	*Is the bird live in the house?*
	THE BIRD DOES NOT LIVE IN THE BOX.	*The bird not live in the box.*

Pedro's deletion of auxiliary *is* is not restricted to negative instances as is seen in excerpt (a). It is successfully imitated only in an interrogative context.

In the target language these auxiliaries enter into a system involving various kinds of related sentence structures: questions, imperatives, negatives, various kinds of anaphoric phrases, etc. The systematic relations between these structures are often characterized in terms of transformational rules. But, as we have seen, the speech of these second-language learners does not show this kind of generalized patterning. This suggests that in early stages the various sentence patterns are learned independently, at different times, and that generalizations across them are not made until later. First language acquisition studies suggest a similar learning sequence. Miller (1973) describes early sentence production in terms of non-generalized patterns such as could be expressed in a grammar of phrase structure rules. The observations of a number of other researchers are consistent with this view (Brown et al., 1968; Cazden, 1968; Ervin, 1964; Miller & Ervin, 1964). In one of the most striking examples of the specialized use of a grammatical feature, Klima and Bellugi (1966) reported that, at a particular stage of acquisition for three first language learners,

subject-auxiliary inversion was restricted to yes/no questions but was not extended to WH- questions. Bellugi (1968) showed that the acquisition process is also sensitive to the polarity of the WH- questions, and that various distinct stages are involved in the acquisition of the complete paradigm. But, rather than supposing that these patterns are acquired independently, Bellugi posited a limit on programming span to account for this. Clark (1974), commenting on a wide variety of idiosyncratic features and patterns observed in child speech, and referring to Klima and Bellugi's findings, suggested a simpler mechanism: that early appearances of grammatical structures may be associated with invariable pre-packaged routines which are gradually extended and modified. This is similar to the "pre-fabricated patterns" for which Hakuta (1974) found extensive evidence in the speech production of young second language learners. Second-language researchers Wagner-Gough and Hatch (1975), finding similar evidence, suggested that units of varying complexity are incorporated into the second-language learner's developing language from frequent discourse patterns he encounters. In related comments, also consistent with our findings, Wagner-Gough and Hatch reported the early appearance of certain question forms (as do Cancino et al., 1975), and give evidence supporting the view that this may be due to the special kind of language or input addressed to young learners. Their study includes data on the adult speech addressed to a child learning English, in which questions and imperatives predominate.

These observations about the acquisition of patterns before they are generalized offer another indication that first- and second-language acquisition proceed along similar lines.

Now we will focus on the performance of the five children for whom we have some longitudinal data. First, we will compare their performance with the full group of twelve of which they were a part. Comparative results are listed in Table 4. The longitudinal group generally represents the middle range of proficiency. Members do not include the three most proficient pupils nor the least proficient one. The longitudinal group's mean percentages of correct responses for the progressive morphemes approximate quite closely the means for the larger group, while results diverge more sharply for the more difficult auxiliary items. The longitudinal group produced very little present tense *-s* and no instances of *did not* or past tense *-ed*, either in constructed or imitated response tasks. The context-sensitive effects that have been discussed (omission of auxiliaries in negative sentences) were especially pronounced among these five children.

Table 4

Morpheme Occurrence in Situational Contexts for Longitudinal Group Children (N=5) Compared with the Total Group (N=12)

Tense/Aspect	Morphemes	Polarity	Mean Percent of Responses			
			Constructed		Imitated	
			12[a]	5[b]	12[a]	5[b]
PRESENT PROGRESSIVE	-ing	af	57	55	85	84
		neg	43	35	86	74
PRESENT PROGRESSIVE	is	af	39	37	57	56
		neg	21	19	49	46
PAST TENSE	did not	neg	21	0	26	0
PRESENT TENSE	-s	af	11	2	23	5
PAST TENSE	-ed	af	7	0	9	0

[a]Total group.

[b]Longitudinal group.

Before presenting the first and third grade data for the five children of the longitudinal group, we summarize in Table 5 the results of the kindergarten study by showing examples of the most frequent, or most characteristic, kinds of responses using actual responses given by Anita, a member of the longitudinal group. She used an extremely reduced auxiliary system, and exhibited some of the other features that have been discussed. Note, in particular, responses with irregular past tenses, where the unchanged verb form persisted even when the correct form was modeled by the interviewer.

Table 5

Overview of the Kindergarten Interview with One Child

AUXILIARY ELICITED	INTERVIEWER	ANITA
PROGRESSIVE	ELLIE, LEE EL LIBRO[a]	*Ellie 'stá leyendo el libro*
affirmative-	ELLIE, READ THE BOOK	*Ellie he read the book*
declarative	Ellie is reading	*Ellie he's reading*
interrogative	Is Ellie reading?	*Is Ellie reading?*
negative-	CAT, TÚ BRINCA	*Él no 'stá brincando*
declarative	CAT, JUMP	*Cat no jump*
	Ellie is not jumping	*Ellie he not is jumping*
	CAT, PUCHA EL LÁPIZ	*Cat no está puchando*
	CAT, PUSH THE PENCIL	*He no push the pencil*
	The bird is not pushing the box	*The bird he no push the box*
PAST TENSE	ELLIE, PINTA LA CAJA	*Ellie pintó la caja*
afrm-dcl	ELLIE, PAINT THE BOX	*Ellie he paint the box*
-[ɨd]	Ellie painted the box	*Ellie paint the box*
-[t]	CAT, JUMP	*Cat he jump*
	The cat jumped	*The cat jump*
strong verbs	ELLIE, LEE EL LIBRO	*Ellie leyó el libro*
	ELLIE, READ THE BOOK	*Ellie* [rIyd] *the book*
	Ellie [red] the book	*Ellie* [rIyd] *the book*
	CAT, TÚ SIÉNTATE	*Cat se sentó*
	CAT, SIT DOWN	*Cat sit down*
	The cat sat down	*The cat sit down*
interrogative	Did the cat jump?	*The cat jump?*
negative-	CAT, TÚ SIÉNTATE	*Cat no se sentó*
declarative	CAT, SIT DOWN	*Cat he no sit down*
	The bird did not sit down	*The bird not sit down*
PRESENT TENSE	DÍME DÓNDE VIVEN	*..Bird vive en la casa*
affirmative-	TELL ME WHERE THEY LIVE	*..Owl he live in the house*
declarative	The bird lives in the house	*The bird live in the house*
interrogative	Does the bird live in the house?	*Is the bird live in the house?*
negative-	The bird does not live in	*The bird he no live in*
declarative	the box	*the box*

Note. Compare with Table 13.

[a]Items in capitals are excerpts from the interviewer's administration of constructed-response tasks (see Figure 1). Items in lower case are models for imitation.

LONGITUDINAL FOLLOW-UP: FIRST GRADE

First grade data were collected in a study of fifteen children enrolled in a special ESL first grade class. The five children in the longitudinal group were among these fifteen. The elicitation procedure involved imitation protocols which required speakers to make some pronoun changes, but otherwise provided full models of the auxiliary. The auxiliary patterns included two which had been investigated in the kindergarten study; these were the two past tense auxiliary structures, with *-ed* and *did not*. Two new auxiliary patterns were also investigated: the affirmative and negative of the present perfect. As we shall see, *did* was the only morpheme to show a substantial increase in frequency. First graders were not able to imitate the perfect morphemes (*have* and *-en*) and for this reason we investigated perfective aspect again when the five children were in the third grade. For all tasks with the perfective, we chose verbs for which the perfective *-en* suffix is phonologically identical to the past *-ed* suffix. We shall see moreover that the perfective and past tense suffixes pattern in similar ways. Table 6 shows the results for the first grade class of fifteen, for the longitudinal group, and for four native English-speaking first graders at the same school.

Table 6

First-Graders' Imitation Responses: All Spanish-speaking Children (ESL, N=15), the "Longitudinal Group" (ESL, N=5) and Native Speakers (NS, N=4)

Sentence Type	Responses			Mean Percent		
	Aux		Suffix	ESL(15)	ESL(5)	NS(4)
Past Tense						
affirmative			*-ed*	8	9	79
declarative			*-Ø*	81	89	11
	have	+	*-en*			7
negative	*didn't*			69	77	75
declarative	*haven't*	+	*-en*	1	3	15
	no/not			2		
Present Perfect						
affirmative	*have*	+	*-en*	1	3	62
declarative	*have*	+	*-Ø*	27	24	9
	Ø		*-ed*	3	4	29
	Ø		*-Ø*	50	46	
negative	*haven't*	+	*-en*			86
declarative	*haven't*	+	*-Ø*	18	28	9
	didn't			24	34	1
	don't			4	6	
	Ø not			2	2	

The performance of the longitudinal group is not substantially different from the class as a whole. The past tense negative (*didn't*) was successfully imitated in a majority of trials (77% group mean). This was true for all five of the children in the longitudinal group, whereas none of them had produced this form a year earlier. The characteristic past negative response in kindergarten was the unmarked verb with *no* or *not* (74%); in the first grade none of the children responded with this form. The improved results for *did* contrast sharply with those for the *-ed* suffix (voiceless consonantal allomorph). This was still virtually absent in the first grade; the unmarked verb form accounted for 88% of affirmative regular past responses in kindergarten and for 89% of the responses in the first grade.

First grade learners also had difficulty with the perfective. This is especially true for the suffix, which was virtually absent, as was the identically pronounced past tense suffix. The perfective auxiliary *have* was deleted in half of the trials and the unmarked verb accounted for 46% of all perfect aspect responses (e.g., Interviewer: *The cookie monster has washed his face;* Imitation: *The cookie monster wash his face).*

One of the most revealing results is found in the negative perfect where in a substantial number of trials the perfective model, *hasn't* or *haven't*, was imitated as *didn't*. Three out of the five children of the longitudinal group used *didn't* in a majority of trials. This suggests that they were able to abstract the meaning of "past time" from the perfective auxiliary as modeled, but substituted a more familiar form which, as we saw above, had been recently learned. This result is particularly striking in light of contrastive analysis between Spanish and English since Spanish has a perfective, the form and function of which are analogous to English, but Spanish does not have *DO*-support, which is a unique feature of English. The children do not transfer the Spanish model but use instead a structure which derived uniquely from their experience with English.

Modal *Can*

Our first grade investigation of the auxiliary also included sentences for imitation containing affirmative and negative forms of the modal *can*. In over 90% of the trials, the children were able to repeat the sentences with some form, however modified, of the elicited modal. Prompt, confident response and the lack of omissions and substitutions suggested that *can* is an early acquisition. However, we found consistent and systematic phonetic deviations from the standard forms of *can* and *can't*. The principal phonetic modification was associated with the negative form *can't*. The standard phonetic shape, [kæt˺], with a final stop, was successfully imitated in only 27% of trials by the five children of the longitudinal study. Contexts were such that a final stop would be readily perceptible in the tape recording. The major realization of *can't*, accounting for 50% of the responses, was

[kæ̃n], with a final nasal continuant, a form identical to the stressed affirmative *can*. Our evidence, as we shall see shortly, suggests that the final stop was not only very difficult for these young learners to produce but also to perceive, and that some other feature was used instead (stress, or vowel [æ̃]) to signal the negative form. Moreover, deletion of the dental suffix in this phonetic environment is strikingly similar to results discussed above in connection with the past tense suffix, and, as we have seen, this inflection was very difficult for these first graders, perhaps for similar phonetic reasons. The potential phonological problem is especially severe when the suffixed morpheme creates a final consonant cluster, as is the case for *can't* and for the past tense items in our elicitation protocol.

Failure to perceive the phonetic distinction between *can* and *can't* appeared to cause these children to restructure and reinterpret the distinction to a *could/can* opposition, with the latter form signaling negative polarity. This hypothesis is suggested by the frequency with which the children altered the affirmative model (usually reduced by the interviewer to [kən]), imitating it as *could* or related variants ([kʊd], [kʊt], [ked], [ke]). These forms accounted for 45% of imitations of affirmative *can*, and a *could/can* opposition was the dominant response pattern for 4 out of 5 children of the longitudinal group. The group distribution of response types across negative and affirmative tasks is shown below for these five children and for four first grade native English speakers. The larger group of 15 Spanish speakers produced results very similar to those of the five longitudinal group children shown. Percentages for the larger group were: affirmative = *could* 41%; negative = *can* 50%.

Table 7

First Grade Imitation Task Results for Modal *Can* and Distribution of Phonetic Variants in Affirmative and Negative Sentences

Response Categories	Second Language Learners, N=5		Native Speakers N=4	
	AF	NEG	AF	NEG
1. [kæ̃n]	22	*50*	*45*	3
2. [kə̃n, kæ̃n, kə̃] etc.	19	10	34	1
3. [kʊd, kə] etc.	*45*	6	11	0
4. [kæ̃t', kæ̃nt] etc.	2	27	1	*88*

The affirmative surface form given by native speakers is [kæ̃n] or a reduced, unstressed variant. The native speaker affirmative/negative contrast is therefore rather complex, involving sets of features one of which is the final stop. The learners, on the other hand, frequently used contrasts that did not include final (*-t*) but which were based instead on presence/absence of vowel [æ], stress and nasality. The most differentiated form of this was a clear *could/can* opposition and this was used quite distinctly and consistently by Dolores and María especially, two of the more advanced learners in the first-grade group.

The potential conflict in forms is illustrated by the following excepts from an interview with Miguel. This interview took place when the children were in the 3rd grade at which time they had clearly acquired the standard forms, except for Miguel who continued to have some difficulty with them. This interview is chosen because it illustrates the fact that the *could/can* opposition is not simply a production phenomenon, but a perceptual one as well.

Interviewer	Miguel
This cat [kæ̃t^{1}] chase the bird.	
Can this cat chase the bird?	No
Right...and I just said: this cat...	[kæ̃n] chase the bird.
Right! Can this cat chase the bird?	No
This cat [kæ̃n] chase the bird.	
Can this cat chase the bird?	Yes
This dog [kæ̃n] call the cat.	
Can this dog call the cat?	No
This dog [kæ̃n] push the cat.	
Now, you tell me: can this dog push this cat?	No

(The interviewer continues in this vein and Miguel steadfastly interprets only the interviewer's reduced [kæ̃n] as affirmative.)

Here the interviewer is using the standard negative, and both stressed and unstressed variants of the affirmative. Miguel does not appear to distinguish the forms of the minimal pair [kæ̃n]/[kæ̃t^{1}], interpreting both as negative.

The case of *can/can't* helps also to clarify our findings concerning the acquisition of inflectional morphology, particularly the regular past tense indicator. It suggests that the observed difficulty with the past suffix is not related to factors of conceptual or linguistic complexity, but stems rather from the generalized perceptual problem of distinguishing final consonants, especially in the environment

of a cluster. First-language interference may contribute to this problem, although it is experienced by young first-language learners of English as well. Miller and Ervin (1964), commenting on the children's tendency to omit suffixes, suggested that "This was probably in part a phonological problem, since the children had less control of the final consonants than of other parts of the phonological system." In the case of *can/can't*, the difficulty associated with morphemic *-t* led to potential reversals of meaning and resulted apparently in the restructuring of the modal *can* paradigm.

LONGITUDINAL FOLLOW-UP: THIRD GRADE

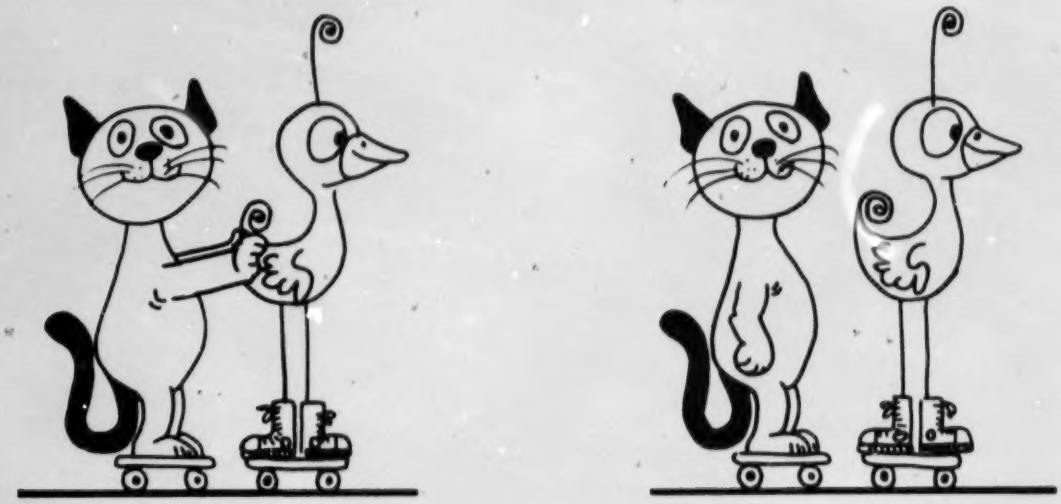
The children in the longitudinal group were interviewed again when they were enrolled in third grade classes. Their proficiency with English had become such that formal ESL instruction was no longer deemed necessary. The language tasks used in the third grade interviews were designed for study of relative clause formation in Spanish and English by early stage second-language learners in kindergarten through sixth grade. As the study was scheduled it became clear that we would be able to include the five pupils we now refer to as the longitudinal group. For the longitudinal group interviews we included perfective aspect in the relative clause tasks.

Interview sessions consisted of the presentation of a series of pictures to the pupils. Each picture contained two frames, with two animal characters in each: a cat and a bird, or a cat and a dog. After describing the pictured situations, the interviewer asked the child to distinguish one cat from the other by pointing to one and asking *Which cat is this?* The 24 interview items were divided evenly into two basic situation types, the one requiring relativization from a nominative case frame (Type I) and the other requiring relativization from an object, or other, case frame (Type II). An example of each of these types is given in Figure 4, along with the elicitation procedure. These tasks were given both in Spanish and English, using both present progressive and present perfect auxiliary patterns. Verbs used in these tasks were *talk to, comb, chase, wash, look at,* and *push.* The items were evenly divided between affirmative and negative target responses.

When we look at the English auxiliary patterns produced by the longitudinal group children in these relative clause responses, we find that the longitudinal group now has virtually perfect control of present progressive patterns in both affirmative and negative contexts (95% and 99% respectively). Perfective aspect is more problematical. In Spanish the five longitudinal group speakers correctly produced the perfective auxiliary, *HABER + -ado/-ido,* in 81% of affirmative trials and 67% of negative trials. Their alternative response was the past participle without an auxiliary verb, and María contributed a large percent of these incorrect Spanish responses. In English these speakers had only moderate success with perfective and the affirmative-negative difference was reversed. In the affirmative the children had difficulty with the auxiliary verb but very little difficulty with the suffix. In the negative, on the other hand, the auxiliary verb caused no trouble but substantially fewer suffixes were produced.

The notably smaller amount of *-en* suffix in negative perfective contexts compared to affirmative is the most striking aspect of the analysis, shown in Table 8. A second notable result is the more accurate production of the auxiliary verb in negative contexts. We have seen that this does not follow from these children's production of perfective patterns in Spanish. It is, however, consistent with their behavior in first grade when we suggested that they were forming perfectives on the model of past tense patterns. This model calls for the auxiliary verb in negative instances only and a suffix only in affirmative instances.

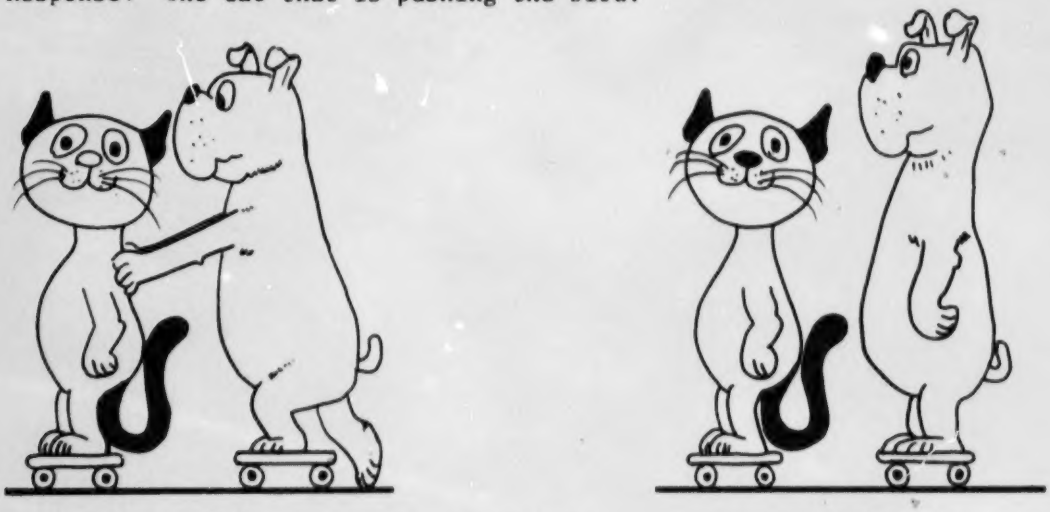
Figure 4. Relative clause elicitation procedure.



(a) TYPE I (b)

Interviewer:

(Points to the cat in frame a) This cat is pushing a bird.
(Points to the cat in frame b) This cat isn't pushing the bird.
(Points to one of the cats as specified in the script; for this example, the one in frame a) Which cat is this?
Response: The cat that is pushing the bird.



(a) TYPE II (b)

Interviewer:

(Points to the cat in frame a) A dog is pushing this cat.
(Points to the cat in frame b) The dog isn't pushing this cat.
(Points to one of the cats as specified in the script; for this example, the one in frame b) Which cat is this?
Response: The cat that the dog isn't pushing.

Table 8

Third Grade Results for Perfective Auxiliary in Relative Clauses

Affirmative	%	Negative	%
have/has + *-en*	40	*haven't/hasn't* + *-en*	57
have/has + *-Ø*	3	*haven't/hasn't* + *-Ø*	32
Ø + *-ed*	29	*didn't*	8
{*ha* / *had*} + *-en*	18	*doesn't*	3
{*ha* / *had*} + *-Ø*	.2		
is + *-ing*	9		
Total *have/has*	43	Total *haven't/hasn't*	89
Total *-ed/-en*	87	Total *-en*	57

We elicited straight imitation of sentences with regular past *-ed* at the end of the third-grade interviews of three of these five speakers, Anita, Miguel and María. The *-ed* suffix was correctly imitated about 90% of the time.

It appears from the relative clause task, from the extra straight imitation and from informal conversation with the five children, that by third grade they controlled a wide variety of English grammatical patterns with native-like proficiency. These included progressive aspect and simple past and simple present suffixes. However, when presented with an interviewer-modeled perfective aspect for incorporation into a relative clause, they had trouble producing adult-like perfective auxiliaries as indicated by the data in Table 8. We suggested that the unfamiliar perfective auxiliary was dealt with here part of the time on the model of now familiar *DO*- support.

Perfective aspect is a late acquisition for native speakers (Brown, 1973b) and is used very infrequently by pre-schoolers especially (Menyuk, 1963). There are a number of reasons to believe the perfective aspect might be difficult for speakers who otherwise control most basic patterns of English. Among these:

(1) The perfect/preterit distinction is an extremely subtle one.

(2) The perfective aspect can be expressed by adverbs like *already* and *still*.

(3) At least some adult speakers use preterit forms with perfective adverbs, e.g., *Did he wash the dishes already?*

(4) In affirmative perfective, forms of *HAVE* contract with subject NPs to form consonantal suffixes which have reduced prominance in the speech signal.

Relative Clause Formation

The foregoing discussion of third grade responses focused on the form of the auxiliary, which was modeled for imitation. In making these responses the children had to construct relative clauses for which no model was given. We will briefly discuss here how well the children of the longitudinal group did this in both Spanish and English. We will compare their performance with another sample of Spanish-speaking children who had much less exposure to English. From these observations we will attempt to determine the nature of relative clause strategies in both the native Spanish and emerging English of these children at both an early stage and a much more advanced stage of English acquisition. For this purpose we divided responses into two main categories:

1. Responses that were semantically appropriate to the task.

2. Responses that were semantically inappropriate.

These categories were further subdivided as shown in Table 9. Examples are given for each of the two relative clause types elicited (see Figure 4).

All five children of the longitudinal group were able to construct the required relative clauses in both Spanish and English in the third grade. They responded with appropriate relative clauses of response category 1a or 1b, introduced by *that* in English and *que* in Spanish, in 97% of trials. However, they failed to produce fully grammatical Spanish or English relative clauses in a substantial number of instances of the more difficult clause type where the object of the embedded clause is relativized (Type II). Some of the third grade children showed a marked preference for category 1b (redundant) responses when constructing this type of relative clause (Table 10).

In general, the ordering of these children in respect to amount of redundant relative clause production is consistent with our impressions of their overall linguistic maturity.

These children had had four years exposure to English. Now we will compare these results with those from 27 K-6 children (mean grade level of 2) who were enrolled in ESL classes and had had no more than two years exposure to English. Spanish results for these earlier stage learners were similar to the advanced learners. Category 1b (redundant) responses were much more frequent at lower grades (75% of candidate responses in kindergarten) and diminished rapidly with grade level. In English, however, the early stage learners managed to construct embedded clauses of category 1a or 1b in only about 25% of their responses. Table 11 shows group average percentages for all appropriate response categories for both groups of speakers and for both types of relative clauses.

Table 9

Relative Clause Response Categories

Response Category	Clause Type	Examples
1a. Appropriate & grammatical	I.	The cat that isn't chasing the bird.
	II.	The cat that the dog isn't chasing
1b. Appropriate but with a redundant pronoun or NP in the embedded proposition	I.	The cat that it isn't chasing the bird.
	II.	The cat that the dog isn't chasing him.
		The cat that the dog isn't chasing the cat.
1c. Appropriate but not embedded	I.	The cat isn't chasing the bird.
	II.	This is the cat...the dog isn't chasing the cat.
2. Inappropriate	I.	The dog isn't chasing the bird.
	II.	The cat isn't chasing the dog.

Table 10

Frequency of Redundancy in Object Relative Clause Constructions

Speaker	Percent Redundant (Category 1b) Responses in English	Percent Redundant (Category 1b) Responses in Spanish
Dolores	0	8
Anita	6	4
María	20	8
Pedro	69	57
Miguel	93	91

Table 11

Responses to Relative Clause Elicitation Tasks by Two Groups of Spanish-speaking Children

Response Category		Beginning/Intermediate ESL Learners, K-6, N = 27				Advanced Learners Grade 3, N = 5			
	Clause Type	SPANISH		ENGLISH		SPANISH		ENGLISH	
		I	II	I	II	I	II	I	II
1a.	Appropriate, Grammatical	*81*	43	18	18	*98*	67	*96*	61
1b.	Appropriate, Redundant	5	47	5	9	0	34	0	35
	TOTAL EMBEDDED RELATIVE CLAUSES	*86*	*90*	23	27	*98*	*99*	*96*	*96*
1c.	Not embedded	11	7	75	47	2	0	4	3
	TOTAL APPROPRIATE RESPONSES	*97*	*97*	*98*	74	*100*	*99*	*100*	*99*

Note again the similarity of Spanish relative clause performance regardless of amount of experience with English. Also note that virtually all responses were semantically appropriate to the task, a moderate exception being the most difficult clause type in English for the early-stage English learners. The large difference between the groups is associated with their English performance, as one would expect. Early-stage English learners show an inability to form relative clauses in English. They simply state the two propositions, or only the second, as separate independent clauses (response category 1c). This is in sharp contrast to their Spanish performance. For the advanced learners, relative clause performance in the two languages is virtually the same. The children apparently find fully grammatical relative clauses of certain types difficult to form in their native language at kindergarten age. This skill is refined over the next several years. Meanwhile they lag in relative clause formation skill in English, recapitulating earlier native language difficulties. The data appear to support the contention that second-language learning among young children does not involve a mapping of first-language skills onto the second but rather recapitulates the course of first-language acquisition. The data also suggest that the beginning stage of relative clause development consists of using coordinate or (juxtaposed) independent structures; that a further stage involves the use of a relativizer to connect these structures, indicating interdependence; and in the final stage the relativizer serves also as an anaphoric device, allowing the relativized constituent to be otherwise deleted, and thus achieving the unity and economy of the fully embedded relative clause structure.

SUMMARY

The data available to us from the three studies discussed in this paper is sufficient to support an acquisition sequence for five auxiliary morphemes. Table 12 summarizes the longitudinal data from which we infer this sequence. To keep the table simple, we do not distinguish the phonetically identical perfective and regular past suffixes. The imitation data from Anita, Miguel, and María discussed earlier indicates that these suffixes behave the same in affirmative past and affirmative perfective.

From Table 12 we infer the following sequence:

(1) In kindergarten, only the progressive suffix was produced to criterion. *Did* and the regular past suffix do not appear at all. We can assume that perfective *HAVE* and the perfective suffix are absent at this stage, since they are still virtually absent in first grade.

Table 12

Summary of Longitudinal Imitation Data for Five Spanish-speaking Children

MORPHEMES	POLARITY	K	1st GRADE	3rd GRADE
-ing	af	[84]		
	neg	[74]		
is	af	56		
	neg	46		
did not	af	0	[77]	
has/have	af		27	43
	neg		29	[89]
-ed/-en	af	0	8	[87]
	neg		0	57

Note. Items in the table for which the group achieved 67% criterion at each grade level are enclosed in boxes. Figures represent the mean percentage of successful imitations for each morpheme.

(2) In first grade, *did* comes under control. *Is* probably comes under control at this stage as well since it is produced with moderate frequency in kindergarten and is under native-like control in third grade. Modal *can* is a special case; the general lexical form is clearly an early acquisition, reaching criterion at least during the first grade period, probably earlier. Difficulty with distinctive final *-t* in the contracted negative apparently encourages a special system of forms for the affirmative/negative contrast in many learners, which may persist over an extended period. Perfective *have* just begins to appear at this time. Neither regular past nor the identically pronounced allomorph of the perfective suffix appears to any notable extent at this stage.

(3) In third grade, perfective *HAVE* and the two suffixes reach criterion in some environments. Perfective *HAVE* appears to be controlled in negative contexts but not in affirmative ones and the perfective suffix appears to be controlled in affirmative contexts, but not in negative ones. As already suggested this may be the result of an analogy to *DO*-support. In any case the use of perfective aspect is still emerging for these pupils in third grade. The additional third grade imitation data for three speakers indicates that past regular suffix is under control at this stage, although it was occasionally deleted.

In order to also present a less abstract view of the production of this data, we show in Table 13 the way one of the speakers, Anita, most frequently imitated these sentence types at each grade level.

Anita was chosen for Table 13 because her responses best typified the group at each grade level. Earlier we presented her kindergarten responses in more detail (see Table 5). In third grade Anita had the highest perfective scores of the group. By that time she seemed quite native-like in casual English conversation, in contrast to the "telegraphic speech" she exhibited in kindergarten. The perfective task was difficult for her, however, as indicated by the fact that she delivered her English perfective responses carefully, pronouncing each morpheme deliberately, while, in contrast, she produced perfective responses rapidly and effortlessly in Spanish. Her errors in English patterned like those of the rest of the group: In affirmative responses she omitted *have/has* and included *-en*, while in negative responses she included *have/has* and omitted *-en*.

In this report we have examined second language production of certain English auxiliary morphemes in affirmative and negative contexts and in distinct sentence types. We elicited the same items from all speakers by using structured tasks which required specific constructed responses and by using imitation tasks. In the kindergarten study we compared the results of constructed and imitated-response tasks and found the relation to be predictive for all but the most generally well controlled item, *-ing*. An acquisition sequence was established for

Table 13

Examples of Responses Given by Anita in Kindergarten, First Grade and Third Grade Imitation Tasks

Grade	Target Morphemes	Example Response(s)	Percent
K	PROGRESSIVE		
	is + -ing	The bird *is* push*ing* the house.	67
	is not + -ing	The bird he no push the box.	38
		Ellie he not is jump*ing*	38
	PAST TENSE		
	-ed	The cat jump.	100
	did not	The cat not read.	43
		Ellie he no paint the house.	29
1st	*-ed*	I wash my hands.	100
	did not	You *didn't* wash the floor.	100
	PRESENT PERFECT		
	has/have + -en	I already wash my hands.	56
	hasn't/haven't + -en	You didn't wash your feet already.	50
3rd	*has/have + -en*	The cat that *has* look*ed* at the bird.	75
	hasn't/haven't + -en	The cat that the dog *hasn't* chas*ed*.	73

Note. Compare with Table 5.

the morphemes studied, although grammatical context was found to be a significant variable that interacts with this sequence. During the first four years of English acquisition, these children maintained native proficiency in Spanish with respect to the fundamental syntactic strategies observed. They demonstrated remarkably similar orders of acquisition of the analogous English forms. Rates of acquisition varied, but in general were similarly paced over the extended period of observation. And finally, our results taken altogether lend support to the hypothesis that the second-language learning process for young children is analogous to the first.

Findings concerning *-ed/-en* morphology suggest some important questions for further study. We found *-ed* to be the most slowly acquired item in the study, much more difficult than most other items. We would like to investigate the role of phonetic context in this difficulty, especially since most of our *-ed* items are correctly realized as final consonant clusters rather than single consonants. Our findings on the

whole suggest that phonetic difficulty may initially constrain past tense marking to a context-sensitive rule, limited to vocalic or sonorant stem-final environments. If this is the case, our own observations would apply to more advanced stages, including generalization of the regular suffix to obstruent environments and finally differentiation of the syllabic allomorph and irregular forms. A related question: Are non-morphemic clusters more frequently simplified than phonetically identical morphophonemic clusters (e.g., *mast* versus *passed*)?

Further research efforts would also be helpful in regard to more advanced areas of syntax such as sentence embedding. As an example of such inquiry, the present report touched briefly upon the development of relative clauses in the speech production of child second-language learners, and it was found that children have considerable difficulty using these constructions in early stages of acquisition. At present, however, little is known about the ways in which children extend their expressive skills in a second language by combining sentences into more complex patterns.

The results reported in this paper and results of continued investigation could be applied with very beneficial effects to various practical problems, including the design of instruments for assessing second-language proficiency and the development of more refined components of instructional support for the naturally occurring acquisition process.

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